

1 1. A display comprising: LCGS
2 a semiconductor substrate;
3 a liquid crystal over semiconductor pixel array
4 formed in said substrate; and
5 a memory coupled to said array, said memory also
6 formed in said substrate.

1 2. The display of claim 1 wherein said pixel array
2 includes a plurality of pixels each including a memory
3 cell.

1 3. The display of claim 2 wherein said memory cells
2 are static random access memory cells.

1 4. The display of claim 1 wherein said pixel array
2 is coupled to said memory by a digital to analog converter.

1 5. The display of claim 1 wherein said memory
2 includes a cell associated with each of a plurality of
3 pixels of the pixel array.

1 6. The display of claim 1 wherein said pixel array
2 forms a reflective liquid crystal spatial light modulator.

1 7. The display of claim 1 wherein said memory a
2 dynamic random access memory, and said display includes a

3 refresh circuit, said refresh circuit adapted to refresh
4 both said dynamic random access memory and said pixel
5 array.

1 8. The display of claim 1 wherein said pixel array
2 is adapted to eliminate the need for a periodic pixel
3 refresh cycle.

1 9. A method for displaying information comprising:
2 forming a pixel array in a liquid crystal over
3 semiconductor substrate; and
4 forming a memory in said liquid crystal over
5 semiconductor substrate, with said memory coupled to said
6 pixel array.

1 10. The method of claim 9 wherein forming a memory
2 includes forming a memory associated with each pixel of
3 said pixel array.

1 11. The method of claim 9 wherein forming a memory
2 includes forming a volatile memory and refreshing said
3 volatile memory and said pixel array in the same refresh
4 cycle.

1 12. The method of claim 9 including displaying
2 information without using a periodic refresh cycle.

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1 13. A display comprising:
2 a memory array;
3 a pixel array; and
4 a refresh circuit coupled to said memory array
5 and said pixel array, said refresh circuit adapted to
6 refresh said memory array and said pixel array.

1 14. The display of claim 13 wherein said memory array
2 and said pixel array are formed in the same semiconductor
3 substrate with said refresh circuit.

1 15. The display of claim 14 wherein said substrate is
2 a liquid crystal over semiconductor substrate, said pixel
3 array including a plurality of electrodes adapted to
4 interact with a liquid crystal material over said pixel
5 array.

1 16. The display of claim 13 wherein said memory array
2 is formed of dynamic random access memory.

1 17. A method for displaying information comprising:
2 providing a pixel array in a semiconductor
3 substrate;
4 providing a memory array in said substrate; and
5 refreshing said memory array and said pixel array
6 in the same refresh cycle.

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1 18. The method of claim 17 including forming said
2 memory and pixel arrays in a liquid crystal over
3 semiconductor substrate.

1 19. The method of claim 17 including storing pixel
2 data in said memory array.

1 20. The method of claim 17 including providing a
2 liquid crystal material over said pixel array.

1 21. A processor-based system comprising:
2 a processor;
3 an interface bus coupled to said processor; and
4 a display coupled to said processor, said display
5 including a liquid crystal over semiconductor substrate,
6 said substrate including a memory array and a pixel array
7 coupled to said memory array.

1 22. The system of claim 21 wherein said memory array
2 includes a plurality of cells, each cell coupled to a pixel
3 of said pixel array.

1 23. The system of claim 22 wherein said memory cells
2 are static random access memory cells.

